

CLAIMS:

1. A laser marking system for marking an object by disrupting the material of the interior or surface of the object, the system comprising a marking head comprising means for directing a laser beam to define a pattern, a laser emitter and laser beam delivery means for delivering the laser beam from the laser emitter to the marking head, wherein the marking head and laser emitter are movable and at least the laser marking head is configured to be carried by a person.
2. A laser marking system according to claim 1, wherein the marking head and the laser emitter are both configured to be carried by a person.
3. A laser marking system according to claim 1 or 2, wherein at least the marking head comprises a handle.
4. A laser marking system according to claim 1, wherein the laser beam delivery means permits the marking head to be displaced with the respect to the laser emitter in at least two dimensions and preferably in least three dimensions.
5. A laser marking system according to claim 4, wherein the laser beam delivery means permits the direction in which the marking head faces to be moved with respect to the laser emitter in two angular dimensions.
6. A laser marking system according to any preceding claim, wherein the laser emitter is configured to be carried by a personal load carrying system.
7. A laser marking system according to any preceding claim, wherein the laser emitter is a carbon dioxide laser.

8. The laser marking system according to claim 7, wherein the carbon dioxide laser is a pulsed carbon dioxide laser.
9. The laser marking system according to claim 8 wherein the carbon dioxide laser is pulsed by a Q-switch.
10. A laser marking system according to any preceding claim, wherein the weight of the marking head does not exceed 5 kg, being preferably less than 3 kg and preferably less than 2kg.
11. A laser marking system according to any preceding claim, wherein the duty ratio of the laser beam is in the range 20-60% preferably 30-50%, most preferably 35-45%.
12. A laser marking system according to any preceding claim, wherein the scanning speed of the laser beam across the object to be marked is in the range 2000-8000, preferably 3000-6000, most preferably 4000-5000mm/s.
13. A laser marking system according to any preceding claim, wherein the power of the laser is in the range 5-20watts, more preferably 10-15watts.
14. A laser marking system according to any preceding claim, wherein the laser beam delivery means comprises a plurality of laser beam conduit sections placed in sequence one after the other, each laser beam delivery section being displaceable with respect to the adjacent laser beam conduit sections around at least one and preferably two axes.
15. A laser marking system according to any of claims 1 to 13, wherein the laser beam delivery means comprises a fibreoptic cable.
16. A method of marking an object by disrupting the material of the interior or surface of the object using a laser, comprising using the laser marking system of any of claims 1 to 15.

17. A laser marking system, substantially as herein described with reference to the accompanying drawings.

18. A method of marking an object , substantially as herein described with reference to the accompanying drawings.